Salmonella Vaccination and Serological Testing in Poultry

Teresa N. Cereno, DVM, Dip. Path., ACPV
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Health of Animals Act and Regulations (1)

- Enabling legislation - Section 2 of the Health of Animals Act – Reportable Diseases Regulations
  - To prevent the transmission of animal diseases in Canada, the CFIA must be notified of the introduction or presence of certain animal diseases in the domestic population.
Health of Animals Act and Regulations (2)

- Reportable diseases – schedule 2
  - Significant importance to human or animal health or to the Canadian economy
  - Control and eradication measures will be applied immediately
  - Notifiable Avian Influenza, Newcastle disease, Pullorum (*Salmonella Pullorum*) and Fowl Typhoid (*Salmonella Gallinarum*)
Health of Animals Regulations – Section 79
Pullorum Disease and Fowl Typhoid

- Outlines monitoring, testing, certification, disease response
  - Farms and hatcheries are covered
- All provinces are established as eradication areas and therefore eradication programs are instituted when disease is found
  - The CFIA Inspector may request flock owners/managers to have their poultry, poultry products or by-products tested for communicable diseases
Tests for S. Gallinarum and S. Pullorum

- The goal is to detect infected supply flocks through a screening procedure before they begin egg production
- Serology
  - Standard tube agglutination test – official blood test
  - Rapid whole-blood test using stained antigen (except turkeys and ducks)
  - Rapid serum agglutination test
- Bacteriology – isolation and identification
Current Issues (1)

- Vaccination against Salmonella paratyphoids has been increasing in the last several years
  - The vaccine may produce a positive serological response when testing for SP and SG using standard tests
  - It does not produce positive Salmonella on isolation and identification
- Some veterinarians have used the serology tests for SP and SG to monitor vaccination response for S. Enteritidis (group D)
  - There is no current available testing kit to monitor for this type of vaccination
Tube agglutination and rapid plate tests

Tube agglutination test

Plate agglutination test

Source: AHL K. Harron
A positive serology test results for SP and SG is reported by the labs to the CFIA as part of the Reportable Diseases Regulations.

Live birds must be submitted to the CFIA authorized labs (non-CFIA lab i.e. AHL) for salmonella isolation, to confirm disease status of the flock.

- Birds are tagged during sampling to ease identification.
- If positive, further tests are done by the CFIA.
Recommendations (1)

- If you are vaccinating for Salmonella (i.e. SE):
  - Get all the facts about the vaccine so you would know what to expect
  - Inform the lab that the birds were vaccinated prior to any serological tests for SP and SG
  - Avoid requesting for Salmonella serological test as a way to evaluate the birds’ response to the vaccine
- Make sure that the lab knows the full vaccination history of the flock so they can interpret the test results better and inform the CFIA, if needed
Recommendations (2)

- It is the responsibility of the private veterinarian to follow through all cases and to work with the CFIA in the investigation and necessary response to reportable diseases

Who’s holding the flag?

Source: iClipart
The Hatchery Regulations are being re-written to update the provisions. Section 79 of the Health of Animals Regulations will be incorporated.

A Hazard Specific Plan is being developed for Pullorum and Fowl Typhoid to replace the response policy written in 1998.

SE will be included as a regulated/named organism.
Questions?

THANK YOU!